

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. 2002-NE-17-AD; Amendment 39-12846; AD 2002-16-07]**

**RIN 2120-AA64**

### **Airworthiness Directives; Bombardier-Rotax GmbH Type 912 F, 912 S, and 914 F Series Reciprocating Engines**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Final rule; request for comments.

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**SUMMARY:** This amendment adopts a new airworthiness directive (AD) that is applicable to certain serial numbers (SN's) of Bombardier-Rotax GmbH type 912 F, 912 S and 914 F series reciprocating engines. This action requires replacement of the valve spring retainers, part number (P/N) 854.182, with the new-reinforced valve spring retainers, P/N 854.184. This amendment is prompted by reports of several cracked valve spring retainers discovered in-service. The actions specified in this AD are intended to prevent cracking of the valve spring retainers resulting in possible engine failure while in-flight.

**DATES:** Effective September 3, 2002. The incorporation by reference of certain publications listed in the rule is approved by the Director of the Federal Register as of September 3, 2002.

Comments for inclusion in the Rules Docket must be received on or before October 15, 2002.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 2002-NE-17-AD, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may be inspected at this location, by appointment, between 8 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays. Comments may also be sent via the Internet using the following address: "[9-ane-adcomment@faa.gov](mailto:9-ane-adcomment@faa.gov)". Comments sent via the Internet must contain the docket number in the subject line.

The service information referenced in this AD may be obtained from Bombardier-Rotax GmbH, Welser Strasse 32, A-4623 Gunskirchen, Austria; telephone 7246-601-232; fax 7246-601-370. Information regarding this action may be examined, by appointment, at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW., suite 700, Washington, DC.

**FOR FURTHER INFORMATION CONTACT:** James Lawrence, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park; Burlington, MA 01803-5299; telephone 781 238-7176; fax (781) 238-7199.

**SUPPLEMENTARY INFORMATION:** Austro Control, which is the airworthiness authority for Austria, notified the FAA that an unsafe condition may exist on certain SN's of Bombardier-Rotax GmbH type 912 F, 912 S, and 914 F series reciprocating engines, that have been converted to a single valve spring arrangement. Austro Control advises that they have received reports of several cracks on valve spring retainers in-service. It has been discovered that during the starting procedure a delayed purging of the lubrication system could occur, which may result in cracking of the valve spring retainer. This condition can occur if one or more hydraulic valve tappets lose their oil prime and fill with air. This is possible at first engine run or at oil change. This condition can be caused by improper purging of the lubrication system, non-compliance of starting and warming up instructions, unsuitable motor oil, or lack of maintenance. A detailed crack detection of the affected valve spring retainers is very difficult and would have to be performed repeatedly. Due to this fact, all affected engines must be equipped with reinforced valve spring retainers that are more resistant to cracking.

### **Manufacturer's Service Information**

Bombardier-Rotax GmbH has issued Mandatory Service Bulletin (MSB) No. SB-912-022/SB-914-011, dated March, 2001, that specifies procedures for replacement of valve spring retainers P/N 854.182. The Austro Control classified this service bulletin as mandatory and issued AD No. 108, in order to assure the airworthiness of these Bombardier-Rotax GmbH engines in Austria.

### **Bilateral Airworthiness Agreement**

This engine model is manufactured in Austria and is type certificated for operation in the United States under the provisions of Sec. 21.29 of the Federal Aviation Regulations (14 CFR 21.29) and the applicable bilateral airworthiness agreement. Pursuant to this bilateral airworthiness agreement, the Austro Control has kept the FAA informed of the situation described above. The FAA has examined the findings of the Austro Control, reviewed all available information, and determined that AD action is necessary for products of this type design that are certificated for operation in the United States.

### **FAA's Determination of an Unsafe Condition and Required Actions**

Since an unsafe condition has been identified that is likely to exist or develop on other Bombardier-Rotax GmbH 912 F, 912 S, and 914 F series reciprocating engines of the same type design, this AD is being issued to prevent cracking of the valve spring retainers resulting in possible engine failure while in-flight. This AD requires replacement of valve spring retainers, P/N 854.182, on engines with the single valve spring configuration, with new-reinforced valve spring retainers, P/N 854.184. The actions must be done in accordance with the service bulletin described previously.

### **Immediate Adoption of This AD**

Since a situation exists that requires the immediate adoption of this regulation, it is found that notice and opportunity for prior public comment hereon are impracticable, and that good cause exists for making this amendment effective in less than 30 days.

## **Comments Invited**

Although this action is in the form of a final rule that involves requirements affecting flight safety and, thus, was not preceded by notice and an opportunity for public comment, comments are invited on this rule. Interested persons are invited to comment on this rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified under the caption ADDRESSES. All communications received on or before the closing date for comments will be considered, and this rule may be amended in light of the comments received. Factual information that supports the commenter's ideas and suggestions is extremely helpful in evaluating the effectiveness of the AD action and determining whether additional rulemaking action would be needed.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the rule that might suggest a need to modify the rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report that summarizes each FAA-public contact concerned with the substance of this AD will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this action must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 2002-NE-17-AD." The postcard will be date stamped and returned to the commenter.

## **Regulatory Analysis**

This final rule does not have federalism implications, as defined in Executive Order 13132, because it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Accordingly, the FAA has not consulted with state authorities prior to publication of this final rule.

The FAA has determined that this regulation is an emergency regulation that must be issued immediately to correct an unsafe condition in aircraft, and is not a "significant regulatory action" under Executive Order 12866. It has been determined further that this action involves an emergency regulation under DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979). If it is determined that this emergency regulation otherwise would be significant under DOT Regulatory Policies and Procedures, a final regulatory evaluation will be prepared and placed in the Rules Docket. A copy of it, if filed, may be obtained from the Rules Docket at the location provided under the caption ADDRESSES.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **Adoption of the Amendment**

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration amends part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

## **PART 39–AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

### **Sec. 39.13 [Amended]**

2. Section 39.13 is amended by adding the following new airworthiness directive:

# AIRWORTHINESS DIRECTIVE

Aircraft Certification Service  
Washington, DC



U.S. Department  
of Transportation  
**Federal Aviation  
Administration**

*We post ADs on the internet at "[www.airweb.faa.gov/rgl](http://www.airweb.faa.gov/rgl)"*

The following Airworthiness Directive issued by the Federal Aviation Administration in accordance with the provisions of Title 14 of the Code of Federal Regulations (14 CFR) part 39, applies to an aircraft model of which our records indicate you may be the registered owner. Airworthiness Directives affect aviation safety and are regulations which require immediate attention. You are cautioned that no person may operate an aircraft to which an Airworthiness Directive applies, except in accordance with the requirements of the Airworthiness Directive (reference 14 CFR part 39, subpart 39.3).

**2002-16-07 Bombardier-Rotax GmbH:** Amendment 39-12846. Docket No. 2002-NE-17-AD.

## Applicability

This airworthiness directive (AD) is applicable to Bombardier-Rotax GmbH type 912 F, 912 S, and 914 F series reciprocating engines with the serial numbers (SN's) in Table 1 of this AD, and all engines that have been converted to a single valve spring arrangement at engine repair or general overhaul. Table 1 follows:

TABLE 1.—ENGINE SERIES BY SN	
Engine model	Engine SN
912 F	4,412.757 to 4,412.794
	4,412.796 to 4,412.807
912 S	4,922.501 to 4,922.534
	4,922.536 to 4,922.552
	4,922.554 to 4,922.577
	4,922.579 to 4,922.636
914 F	4,420.039 to 4,420.048
	4,420.050 to 4,420.067
	4,420.069 to 4,420.082
	4,420.084 to 4,420.097
	4,420.099 to 4,420.114
	4,420.116 to 4,420.155
	4,420.157 to 4,420.253

These engines are installed on, but not limited to, Diamond Aircraft Industries, DA20-A1, Diamond Aircraft Industries GmbH Model HK 36 TTS, Model HK 36TTC, and Model HK 36 TTC-ECO, Iniziative Industriali Italiane S.p.A. Sky Arrow 650 TC and Sky Arrow 650 TCN, Aeromot-Industria Meccanico Metalurgica ltda., Models AMT-300 and AMT-200S, and Stemme S10-VT aircraft.

**Note 1:** This AD applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (c) of this AD. The request should include an

assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

## Compliance

Compliance with this AD is required as indicated, unless already done.

To prevent cracking of the valve spring retainers resulting in possible engine failure while in-flight, do the following:

## Replacement Procedure

(a) Replace valve spring retainers part number (P/N) 854.182, of single valve spring configuration, with valve spring retainers P/N 854.184, in accordance with 3.1.1 of the Accomplishment Instructions of Mandatory Service Bulletin (MSB) SB-912-022/SB-914-011, dated March, 2001, using the compliance times in the following Table 2:

<b>TABLE 2.—COMPLIANCE SCHEDULE</b>	
<b>Engine flight hours (FH) on the effective date of this AD</b>	<b>Replace</b>
(1) 0 FH (new engine)	Before installing on aircraft.
(2) 10 hours or less ..	Within 10 FH after the effective date of this AD.
(3) More than 10 but less than or equal to 25 FH.	Within 25 FH after the effective date of this AD.
(4) More than 25 FH	Before exceeding 100 FH.

(b) For engines that have had the oil system accessed during repair or maintenance, replace the valve spring retainers in accordance with 3.1.1 of the Accomplishment Instructions of Mandatory Service Bulletin (MSB) SB-912-022/SB-914-011, dated March, 2001, within 10 FH after the effective date of this AD.

## Alternative Methods of Compliance

(c) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Engine Certification Office (ECO). Operators must submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, ECO.

**Note 2:** Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the ECO.

## Special Flight Permits

(d) Special flight permits may be issued in accordance with Secs. 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be done.

## **Documents That Have Been Incorporated by Reference**

(e) The replacements must be done in accordance with Bombardier-Rotax GmbH Mandatory Service Bulletin (MSB) SB-912-022/SB-914-011, dated March, 2001. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained from Bombardier-Rotax GmbH, Welser Strasse 32, A-4623 Günskirchen, Austria; telephone 7246-601-232; fax 7246-601-370. Copies may be inspected at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA; or at the Office of the Federal Register, 800 North Capitol Street, NW, suite 700, Washington, DC.

**Note 3:** The subject of this AD is addressed in Austro Control airworthiness directive No. 108.

## **Effective Date**

(f) This amendment becomes effective on September 3, 2002.

Issued in Burlington, Massachusetts, on August 2, 2002.

Jay J. Pardee,  
Manager, Engine and Propeller Directorate, Aircraft Certification Service.  
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